

THREE NEW SPECIES AND A NEW SUBSPECIES  
OF ORIBATID MITES (ACARI: ORIBATEI)  
FROM OKINAWA IN JAPAN

Sumio NAKATAMARI

Okinawa Shogaku High School, Naha, Okinawa 902, Japan

**Synopsis**

NAKATAMARI, Sumio (Okinawa Shogaku High School, Naha, Okinawa 902, Japan): Three new species and a new subspecies of oribatid mites (Acari: Oribatei) from Okinawa in Japan. *Acta arachnol.*, 33: 19-27 (1985).

Three new species and a new subspecies belonging to the genera *Oribotritia*, *Paraphthiracarus* and *Peloribates* were described from Okinawa Island.

This is the second report of oribatid mites from Okinawa Island, where no one has long paid heed to the oribatid fauna and many species will be recorded hereafter.

The author wishes to express his sincere thanks to Prof. Dr. Jun-ichi AOKI of Yokohama National University, who read manuscript and gave the author valuable suggestion, and Prof. Tetuo OMINA of Okinawa University, who helped the author in collecting soil samples in Kunigami-son.

***Paraphthiracarus parvatus* sp. nov.**

[Japanese name: Madoka-irekodani]

*Material examined.* Holotype (NSMT-Ac 9644, on slide): Naha-shi, Okinawa. 13-VIII-1983, S. NAKATAMARI. 5 paratypes (on slides): 27-VI-1982 and 13-VIII-1983. Holotype and paratypes are deposited in the collection of the National Science Museum, Tokyo.

*Measurement.* Notogaster (L) 560 (635) 710  $\mu$ , notogaster (H) 460 (490) 520  $\mu$ , aspis 290 (330) 370  $\mu$ , the longest notogastral setae 90  $\mu$ .

*Aspis.* Surface of aspis covered with minute grains. Lateral carina nearly straight, almost reaching rostral margin. Interlamellar setae longer than lamellar and rostral setae; exothridial setae shorter than *le*, their relative length:

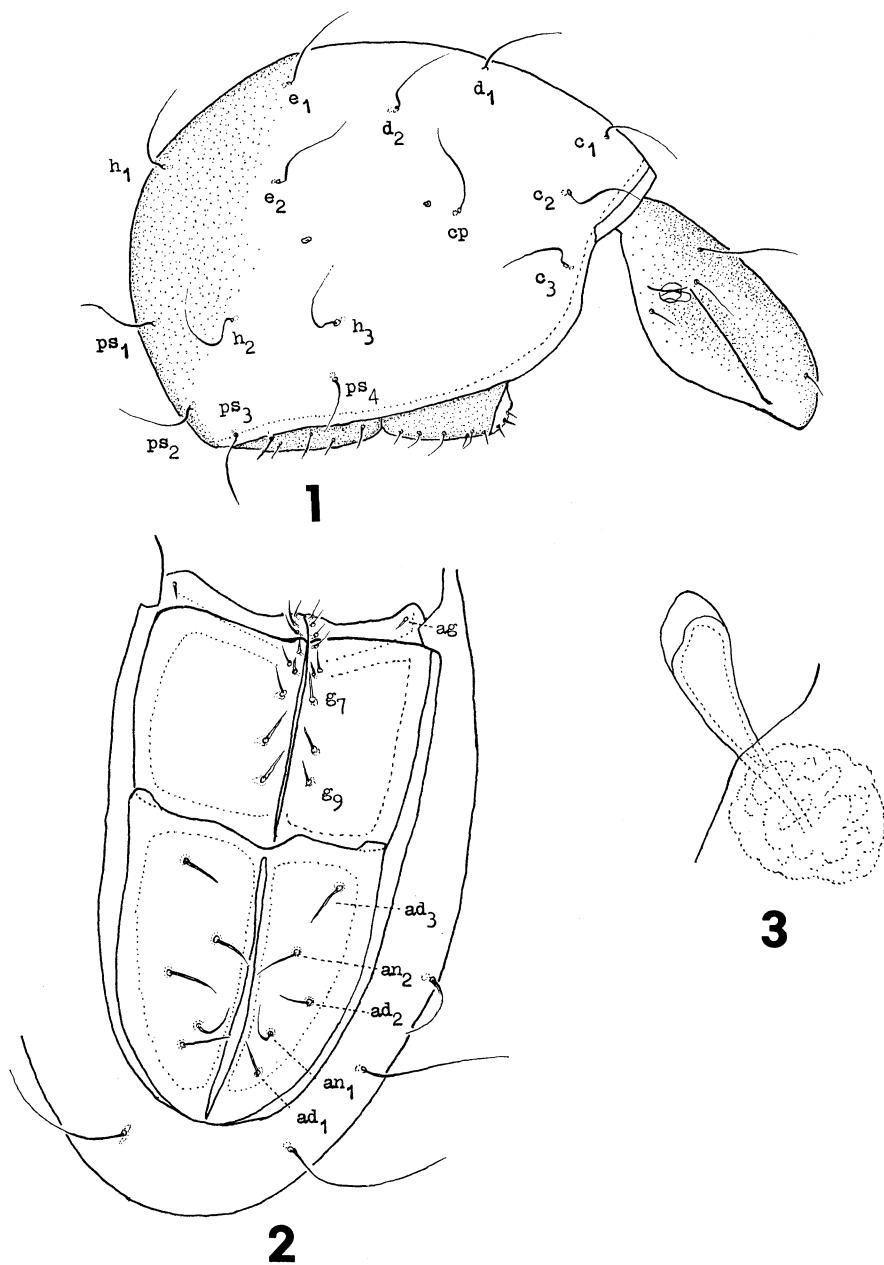


Fig. 1. *Paraphthiracarus parvatus* sp. nov.—1: Lateral.  
2: Ano-genital region. 3: Sensillus.

*in>le>ro>ex.* Sensillus has a short pedicel and a thick, clavate head.

*Notogaster.* Surface of notogaster covered with minute grains as on aspis; integument solid and light brown in color. Fifteen pairs of notogastral setae fine, weakly winding near their base. Tip of setae  $c_1$  and  $c_2$  crossing over the anterior margin of notogaster.

*Genito-anal region.* Nine pairs of genital setae arranged in 2 rows,  $g_6-g_9$  in the outer row and  $g_1-g_5$  in the inner row;  $g_1-g_3$  of the inner row situated on the anterior appendage of genital plate; aggenital setae small, being located near the outer corner of the appendage. Anal and adanal setae almost similar in length; their relative distances:  $ad_2-ad_3 > ad_1-an_2 > ad_1-ad_2$ .

*Remarks.* Three species of the genus *Paraphthiracarus* have been known from Japan. *Paraphthiracarus lanatus* (FEIDER et SUCIV, 1957) is similar to the new species in having sensilli with a clavate head, but the notogastral and pro-dorsal setae are far shorter than in the latter. The other two Japanese species, *P. australis* AOKI, 1980 and *P. gibber* AOKI, 1980 have lanceolate sensilli.

### *Oribotritia chichijimensis ryukyuensis* subsp. nov.

[Japanese name: Ryukyu-irekodani]

*Material examined.* Holotype (NSMT-Ac 9646, on slide): Naha-shi, Okinawa, 13-VIII-1980, S. NAKATAMARI. 5 paratypes (on slides): 27-VI-1982, 21-VIII-1982 and 13-VIII-1983. Holotype and paratypes are deposited in the collection of the National Science Museum, Tokyo.

*Measurement.* Notogaster (L) 910 (1205) 1500  $\mu$ , notogaster (H) 690 (720) 750  $\mu$ , aspis 540 (570) 600  $\mu$ , the longest notogastral setae 150  $\mu$ .

*Aspis.* Lamellar and interlamellar setae thinner than rostral setae; their relative length:  $ro>in>le$ ; lamellar, interlamellar and rostral setae bending downward and inward, with a fine tip. Sensillus short, lanceolate, bearing a hyaline distral portion. The posterior part of aspis shows an irregular integumental pattern of light and dark colors.

*Notogaster.* Fourteen pairs of notogastral setae curved, with fine tip; tip of setae  $c_2$  and  $c_3$  crossing over the anterior margin. Lyrifissure *ip* located between  $e_2$  and  $h_3$ .

*Genito-anal region.* Genital, aggenital, anal and adanal setae very short and simple; aggenital setae  $ag_2$  the longest;  $ag_2$  twice as long as  $ag_1$ . Anal setae  $an_1$  located nearly in the level of setae  $ad_3$ .

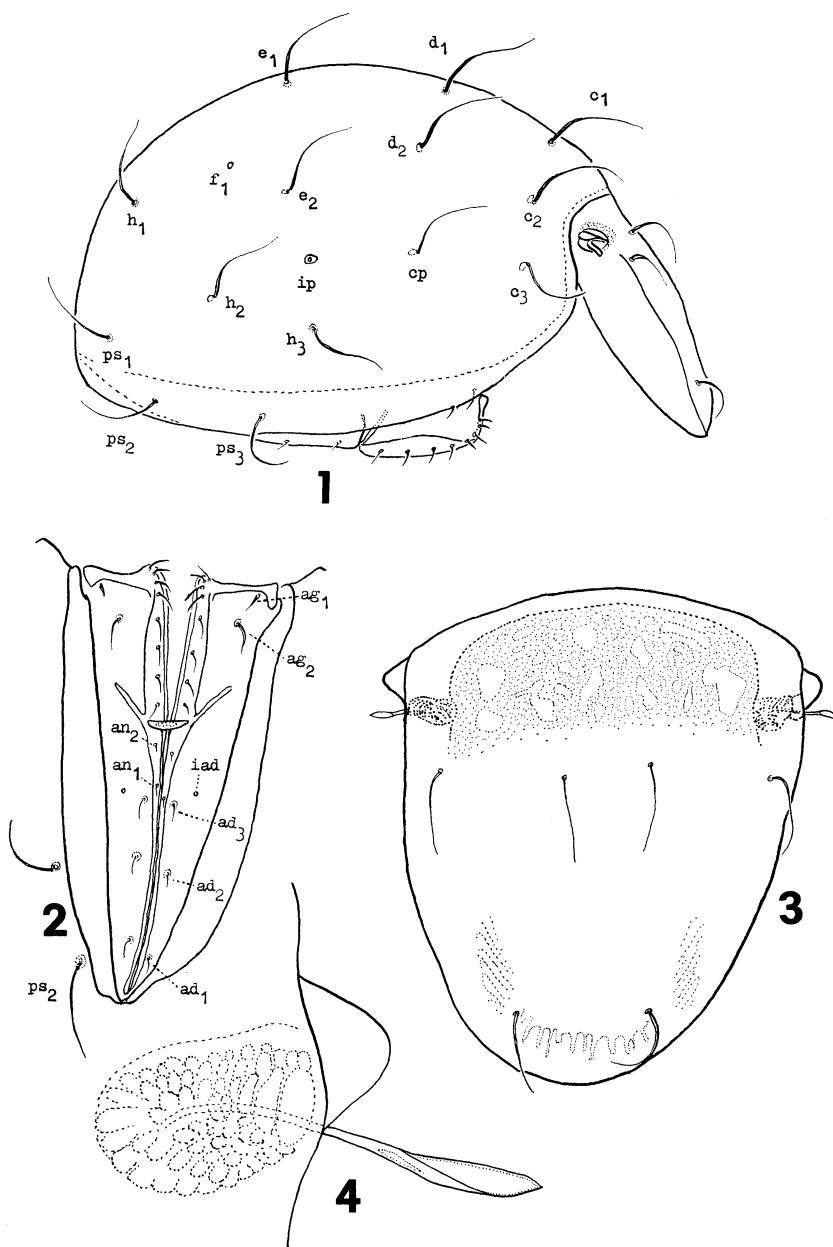


Fig. 2. *Oribotritia chichijimensis ryukyuensis* subsp. nov.—1: Lateral.  
2: Ano-genital region. 3: Aspis. 4: Sensillus.

*Remarks.* The new subspecies is differs from the nominate subspecies, *O. chichijimensis chichijimensis* AOKI, 1980 from the Bonin Islands, in the longer prodorsal and notogastral setae, the shorter and broader sensilli, and the lyrifisure *ip* located between setae *e<sub>2</sub>* and *h<sub>3</sub>*.

***Peloribates ominei* sp. nov.**

[Japanese name: Omine-marukosodedani]

*Material examined.* Holotype (NSMT-Ac 9648, on slide): Kunigami-son, Okinawa. 13-VIII-1983, S. NAKATAMARI. 4 paratypes (on slides): 27-VIII-1983, Naha-shi, Okinawa. Holotype and paratypes are deposited in the collection of the National Science Museum, Tokyo.

*Measurement.* Body length: 420 (425) 440  $\mu$ ; width: 320 (340) 360  $\mu$ ; RLN of body setae: *ro* 21.3, *le* 36.2, *in* 27.7, *c<sub>1</sub>* 22.0, *c<sub>2</sub>* 19.2, *da* 23.4, *dm* 24.9, *dp* 27.0, *la* 19.2, *lm* 19.9, *lp* 20.0, *h<sub>1</sub>* 17.0, *h<sub>2</sub>* 28.5, *h<sub>3</sub>* 22.7, *ps<sub>1</sub>* 17.0, *ps<sub>2</sub>* 22.0, *ps<sub>3</sub>* 21.3.

*Prodorsum.* The surface of prodorsum covered with foveolae and minute punctures. Lamellar and interlamellar setae barbed with very short prickles; lamellar setae a little longer than interlamellar setae; *le* strongly curved inward, sometimes sigmoid.

*Notogaster.* Notogaster covered with clear foveolae as on prodorsum. All the notogastral setae, blunt at tip with barbation becoming stronger toward apex of the setae; RLN of the setae 17-28.5 (average: 21.7); setae *h<sub>2</sub>* are the longest, setae *h<sub>1</sub>* and *ps<sub>1</sub>* are the shortest; setae *dm*, *dp* and *h<sub>2</sub>* longer than their mutual distances, other setae shorter than their mutual distances; the relative lengths of the mutual distances of the median setae: *c<sub>1</sub>-c<sub>1</sub>* > *da-da* > *dp-dp* = *h<sub>2</sub>-h<sub>2</sub>* > *dm-dm* > *ps<sub>1</sub>-ps<sub>1</sub>*. Sacculi small; *Sa* close to and in front of setae *lm*, *S<sub>1</sub>* between *dp* and *lp*, *S<sub>2</sub>* between *h<sub>2</sub>* and *h<sub>3</sub>*.

*Ventral side.* Genital and anal plate with clear foveolae. Five pairs of genital setae a little longer than anal setae or adanal setae. Three pairs of adanal setae simple.

*Remarks.* The present species very similar to *Peloribates barbatus* AOKI, 1977, *P. longisetosus* (WILIMAN, 1930) and *P. rangiroaensis asiaticus* AOKI et NAKATAMARI, 1977. In *P. barbatus*, the tip of notogastral setae *c<sub>1</sub>*, *da*, *dm* and *dp* hardly reaching the base of *da*, *dm*, *dp* and *h<sub>2</sub>*, respectively; the longest setae are *h<sub>1</sub>*; all the notogastral setae are shorter than their mutual distances; interlamellar setae longer than lamellar setae. But the present species differs from

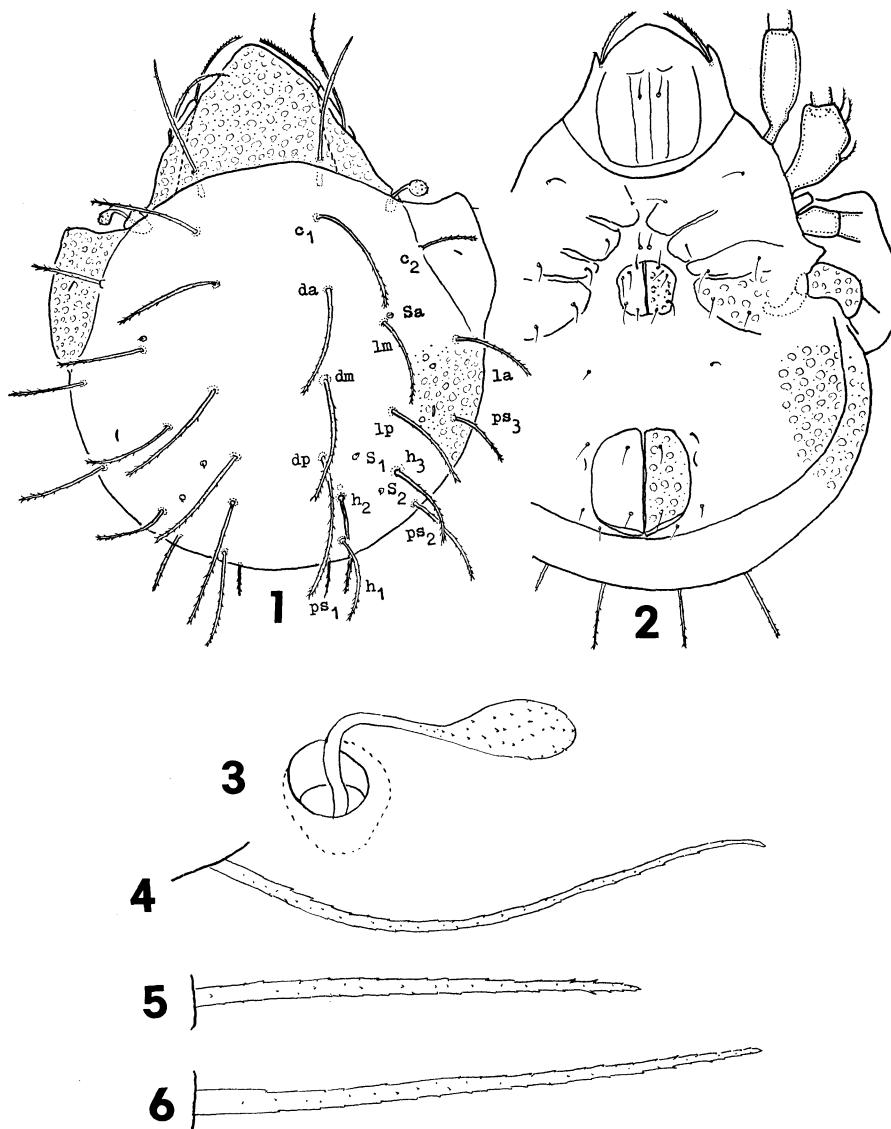


Fig. 3. *Peloribates ominei* sp. nov.—1: Dorsal. 2: Ventral. 3: Sensillus. 4: Lamellar seta. 5: Notogastral seta  $c_1$ . 6: Interlamellar seta.

the former in that the tip of notogastral setae  $c_1$ ,  $da$ ,  $dm$ ,  $dp$  and  $h_2$  extend beyond base of  $da$ ,  $dm$ ,  $dp$ ,  $h_2$  and  $h_1$ , respectively; the longest setae are  $h_2$ ; setae  $dm$ ,  $dp$  and  $h_2$  longer than their mutual distances; interlamellar setae shorter than lamellar setae. *P. longisetosus* has long sensilli and no foveolae on notogaster. *P. rangiroaensis asiaticus* has shorter notogastral setae.

***Peloribates formosus* sp. nov.**

[Japanese name: Yokonaga-marukosodedani]

*Material examined.* Holotype (NSMT-Ac 9650, on slide): Kunigami-son, Okinawa, 20-VI-1982, S. NAKATAMARI. 3 paratypes (on slides): the same data as holotype. The type-series is deposited in the collection of National Science Museum, Tokyo.

*Measurement.* Body length: 590 (600) 610  $\mu$ , width: 470 (475) 480  $\mu$ ; RLN of body setae;  $ro$  19.6,  $in$  33.4,  $le$  28.0,  $c_1$  29.0,  $c_2$  27.6,  $da$  27.6,  $dm$  24.8,  $dp$  25.0,  $la$  24.3,  $lm$  23.8,  $lp$  23.8,  $h_1$  25.7,  $h_2$  24.5,  $h_3$  23.8,  $ps_1$  23.4,  $ps_2$  23.4,  $ps_3$  22.0.

*Prodorsum.* Prodorsal setae barbed; interlamellar and lamellar setae longer than rostrals. Sensillus, with a weakly swollen, lanceolate head minutely barbed; exposed part of sensillus as long as the shortest notogastral setae.

*Notogaster.* Integument of notogaster comprising clear foveolae and punctures. Integument of pteromorpha shows large and small foveolae mixed on the median portion, but they disappear down the apex of pteromorpha. Notogastral setae long, barbed and blunt at tip; RLN of the setae 22.0-29.0 (average: 24.9); setae  $c_1$  the longest; setae  $h_2$  shorter than their mutual distances; other setae longer than their mutual distances; the relative length of the mutual distances of the median setae:  $h_2-h_2 > da-da = dp-dp > dm-dm$ . Sacculi large and T-shaped;  $S_1$  situated near the setae  $lm$ ;  $S_1$  between  $dp$  and  $lp$ ;  $S_2$  between  $h_2$  and  $h_3$ .

*Ventral side.* Genital, adgenital and anal setae short and simple; almost equal in length. Three pairs of adanal setae short and weakly barbed.

*Remarks.* The present species has a similarity to *Peloribates kalboprodorsalis* CORPUZ-RAROS, 1979, *P. magkakaibaeus* CORPUZ-RAROS, 1979, *P. magnisetosus* RAMSAY, 1967, *P. pakistanensis* HAMMER, 1973 and *P. gressitti* BALOGH et MAHUNKA, 1966 in the shape of sensilli, but large and peculiarly shaped sacculi distinguish the new species from them.

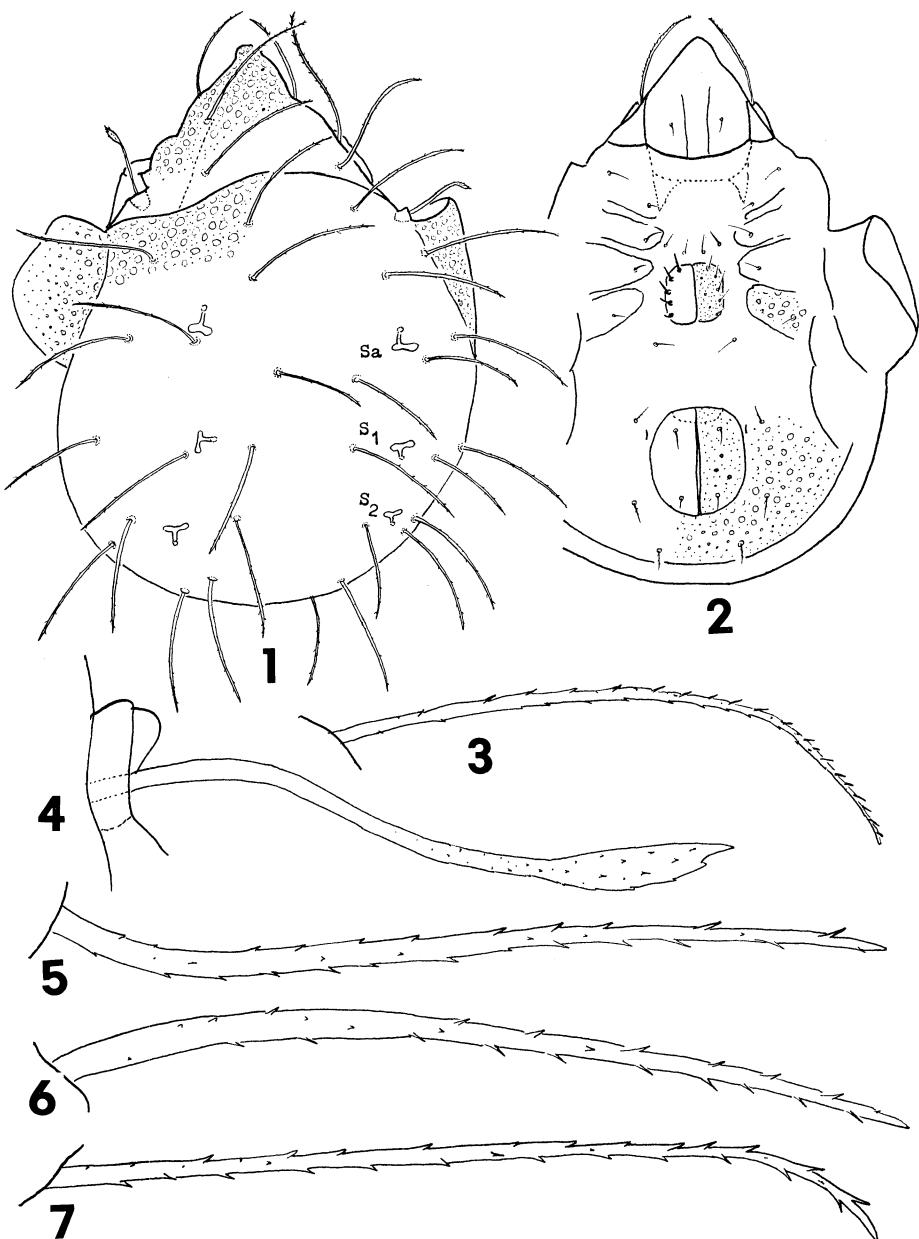


Fig. 4. *Peloribates formosus* sp. nov.—1: Dorsal. 2: Ventral. 3: Rostral seta. 4: Sensillus. 5: Interlamellar seta. 6: Notogastral seta  $c_2$ . 7: Lamellar seta.

## 摘要

中玉利澄男（沖縄尚学高等学校，〒902 那覇市国場747番地）：沖縄産ササラダニの3新種と1新亜種。

沖縄本島の那覇市から *Paraphthiracarus parvatus* マドカイレコダニ（新称）と *Oribotritia chichijimensis ryukyuensis* リュウキュウイレコダニ（新称），国頭村から *Peloribates ominei* オオミネマルコソデダニ（新称）と *Peloribates formosus* ヨコナガマルコソデダニ（新称）を命名，記載した。

## Literature

AOKI, J., 1961. On the six new oribatid mites from Japan. *Jap. J. Sanit. Zool.*, 12(4) : 233-238.

——— 1967. Oribatiden (Acarina) Thailands. II. *Nature and Life in Southeast Asia*, (5) : 187-207.

——— 1977. Two new *Peloribates*-species (Acari, Oribatida) collected from lichens growing on tombstones in Ichihara-shi, central Japan. *Annot. Zool. Japan.*, 50 : 187-190.

——— 1980. A revision of the oribatid mites of Japan. I. The families Phthiracaridae and Oribotritiidae. *Bull. Inst. Env. Sci. Techn. Yokahama Natn. Univ.*, 6(2) 1-89.

——— & S. NAKATAMARI 1974. Oribatid mites from Iriomote-jima, the southermost island of Japan (II). *Mem. Natn. Sci. Mus., Tokyo*, (7) : 129-134.

BALOGH, J. & S. MAHUNKA, 1967. New oribatids (Acari) from Vietnam. *Acta. Zool. Acad. Sci. Hung.*, 8 : 57-74.

CORPUZ-RAROS, L. A., 1979. Philippine oribatei (Acarina). I Preliminary list of species and descriptions of forty new species. *Philippine Agriculturist*, 62(1) : 62-73.

HAMMER, M., 1967. Investigations on the oribated fauna of New Zealand. *Biol. Skr. Dan. Vid. Selsk.*, 15(4) : 42-45.

——— 1977. Investigations on the oribatid fauna of Northwest Pakistan. *Biol. Skr. Dan. Vid. Selsk.*, 21(4) : 47-52.

WALLWORK, J. A., 1964. Some Oribatei (Acari: Cryptostigmata) from Tchad (1st. series). *Revue zool. Bot. Afr.*, 70 : 378-381.